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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,584	03/28/2001	Narutoshi Fukuzawa	P107424-00024	3657
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RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			EXAMINER ANGEBRANNDT, MARTIN J	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/818,584

Applicant(s)

FUKUZAWA, NARUTOSHI

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 9/3/2003 & 10/6/2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. The response provided by the applicant has been read and given careful consideration.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yanagimachi et al. JP 10-011799.

Examples 1, teaches the coating of a phthalocyanine dyes containing recording layer with a silver reflective layer formed by DC magnetron sputtering at 5 mTorr (0.67 Pa) and a power of 5kW, followed by a UV cured protective layer and has a grain size of 52 nm.[0028] The addition of azo or cyanine dyes to the recording layer is disclosed. [0013]. The reduction of the crystal grain diameter is disclosed as desirable, particularly within the range of 30 to 50 nm to achieve high reflectivity with good moisture and heat resistance [0019-0020]. The crystal grain size is reduced as the sputtering power is increased and the gas pressure is reduced [0022]. The addition of metals in amounts of 0.1-5% , including In, Rh, Pd, Pt, Ti, Mo, Ta, Zr, Va, W, Cu, Zn, and Ni is disclosed [0022].

The instant specification indicates that reduced gas pressures during sputtering and increased sputtering power yield higher (200)/(111) ratios. The pressure in example 6 in table 1

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of the specification is 0.14 Pa higher, but 2 kW lower and has a (200)/(111) of 0.49. In examples 1,2&3 of the table 1 of the specification, the pressure is held constant and the power is increased by 2kW, which yields an increase of 0.04 in the ratio of (200)/(111). Based upon the analysis, the examiner holds that the (200)/(111) is in excess of 0.49. The best guess might be ~0.52-0.54, noting the higher increase when the power is increased between 3 and 4 kW, rather than between 2 and 3 kW.

The Declaration asserts that there is no correlation between crystallite size and the ratio of  $I(200)/I(111)$ . Clearly over the entire range of data shown, there is no linearly related inverse relationship, but the last data (comparative) point is well outside the range of the other three (inventive) points and therefore is of less probative value. As pointed out, the instant specification indicates that reduced gas pressures during sputtering and increased sputtering power yield higher (200)/(111) ratios. Example 6 is the transition point in the examples of the instant specification. Example 6 in table 1 of the specification is 0.14 Pa lower, but 2 kW higher than the example of Yanagimachi et al. JP 10-011799 and has a (200)/(111) of 0.49. If the sputtering power had no effect (but is disclosed as having an effect in the instant specification based upon analysis of the data), then the piecemeal analysis in the declaration would be correct and the  $I(200)/I(111)$  would be slightly below 0.49, but the sputtering power is shown in the analysis of table 1 the effects of a 2kW power increase is approximately 0.04 which the examiner asserts overcomes the effects of the pressure increase relative to example 6. The declaration fails to address the effects of sputtering power and the examiner notes that increasing the sputtering power is disclosed in the reference as desirable [0022]. The analysis by the applicant's representative also fails to acknowledge the effects of sputtering power. The examiner also notes

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that to sputter, power must be applied, and therefore ignoring this implicit and unrecited limitation to the claims fails to address the issue. The declaration adds nothing to the record and fails to provide data concerning the relationship between the sputtering power and the I(200)/I(111). The rejection stands.

5. Claims 1,4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagimachi et al. JP 10-011799.

It would have been obvious to add azo or cyanine dyes to the recording layer of the example based upon the disclosure to do so within section [0013].

The rejection stands for the reasons above without further comment as no further arguments were directed at this rejection.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '122, in view of Yanagimachi et al. JP 10-011799.

Usami et al. '122 teach optical recording media, which have, grooves of depths of most preferably 150-200 nm, widths of 200-900 nm (0.2-0.9 microns) and a pitch of 0.3 to 0.9 microns. (6/5-18) The use of various dyes including cyanine and azo dyes is disclosed (6/19-34 and examples) The use of silver reflective layers and methods for making them including sputtering and ion plating is disclosed. (7/23-36). The formation of protective layer on these is also disclosed. (7/37-64). Example 2 uses a groove pitch of 0.74 microns, a depth of 150 nm and a width at half height of 300 nm, which is coated with a cyanine dye containing recording layer, uses DC magnetron sputtering to produce the silver film and a UV overcoat layer.

The examiner notes that figure 1 of the instant specification shows the groove widths measured at half height.

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Usami et al. '122 teach the invention as claimed, except that the properties of the reflective layer and the sputtering conditions are not disclosed. It would have been obvious to one skilled in the art to use the sputtering conditions of Yanagimachi et al. JP 10-011799 when performing the DC magnetron sputtering process forming the silver film in the process of Usami et al. '122 with a reasonable expectation of gaining benefits of high reflectivity and moisture resistance ascribed to the reflective layer by Yanagimachi et al. JP 10-011799.

The rejection stands for the reasons above without further comment as no further arguments were directed at this rejection.

7. Claims 1,4 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagimachi et al. JP 10-011799, in view of Nee '402.

Nee '402 describes in example 11, sputtering conditions useful as 1000 W at pressures of 1-3 mTorr (0.13-0.39 Pa). Example 1 sputters an AgPd alloy containing 8-10% Pd. The addition of 0.1-15% Pd in an AgPd alloy is disclosed (7/12-20). The combination of AgPdCu is disclosed. (8/15-34)

It would have been obvious to one skilled in the art to modify the example of Yanagimachi et al. JP 10-011799 by using reduced pressures, such as 2-3 mTorr (0.26-0.39 Pa) taught by Nee '402 to further reduce the grain sizes within the preferred range of 30-50 nm [0019] based in part upon the disclosure that reducing the pressure leads to decreased crystal sizes [0022].

The rejection stands for the reasons above without further comment as no further arguments were directed at this rejection.

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8. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '122, in view of Yanagimachi et al. JP 10-011799 and Nee '402.

It would have been obvious to one skilled in the art to modify the combination of Usami et al. '122 and Yanagimachi et al. JP 10-011799 discussed above by using reduced pressures, such as 2-3 mTorr (0.26-0.39 Pa) taught by Nee '402 to further reduce the grain sizes within the preferred range of 30-50 nm [0019] based in part upon the disclosure that reducing the pressure leads to decreased crystal sizes [0022].

The rejection stands for the reasons above without further comment as no further arguments were directed at this rejection.

**9 THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**10** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in black ink, appearing to read 'M. Angebranndt', written over the printed name.

Martin J Angebranndt  
Primary Examiner  
Art Unit 1756

November 10, 2003